

Not referred to DOC. Waiver

EXECUTIVE SECRETARIAT
Routing Slip

| TO: | | ACTION | INFO | DATE | INITIAL |
|----------|-----------|----------------|------|------|---------|
| 1 | DCI | | | | |
| 2 | DDCI | | | | |
| 3 | EXDIR | | | | |
| 4 | D/ICS | | | | |
| 5 | DDI | | | | |
| 6 | DDA | | | | |
| 7 | DDO | | | | |
| 8 | DDS&T | | | | |
| 9 | Chm/NIC | ✓ | | | |
| 10 | GC | | | | |
| 11 | IG | | | | |
| 12 | Compt | | | | |
| 13 | D/EEO | | | | |
| 14 | D/Pers | | | | |
| 15 | D/OEA | | | | |
| 16 | C/PAD/OEA | | | | |
| 17 | SA/IA | | | | |
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| 19 | C/IPD/OIS | | | | |
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| SUSPENSE | | 15 OCT Date | | | |

ACTION: NIO/Economics
Reply to DCI due
on 15 OCT

Comments:

(copied to HR; FH
& NIO/USSR & NIO/WE)

Remarks:

For comment to the DCI.

CC: SOVA 061

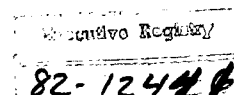
D/EURA

Executive Secretary
10/8/84
Date

OCT 7 1982



UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for International Trade
Washington, D.C. 20230



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DDI- 8223/82

MEMORANDUM FOR Honorable William J. Casey
Director, Central Intelligence Agency

FROM: Lionel H. Olmer *LH*

SUBJECT: Soviet/West European Pipeline Project

I am enclosing for your review the following analysis of the energy/economic elements of the Soviet/West European pipeline deal.

The primary finding of the paper is that the project appears to be commercially viable despite the interest rate subsidy the Europeans are extending to the Soviets.

The interest rate subsidy will be offset within five years by the higher prices (20%) the Europeans charge the Soviets for equipment and services and lower gas prices. Additionally, the price escalation and other commercial terms the Europeans received from the Soviets appear superior to comparable provisions in other Free World gas import transactions. The basis for the analysis is sensitive information obtained on the Soviet/Ruhr gas supply contract business proprietary from industry and foreign sources.

The information was difficult to obtain given the absence of a public natural gas regulatory process in Western Europe. The Europeans are also reluctant to divulge the salient price and cost terms of their transactions with the Soviets. My only concern is that we still need to obtain additional information on the specific loan and profit terms of European pipeline-related equipment and services contracts.

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applies.

Attachment

82-12446

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ENERGY AND ECONOMIC EVALUATION OF THE SOVIET-WEST EUROPEAN
NATURAL GAS PIPELINE PROJECT

SUMMARY

- (C) The Soviet-West European Natural Gas Pipeline Project (Yamal) appears to be a viable commercial venture from the perspective of the European purchasers. Subsidies given to the Soviets in the form of below market interest rates are likely to be offset by the Europeans charging a higher price for the equipment and services sold to the Soviets and receiving lower a gas price than could be obtained from other gas suppliers.
- (C) Contracts to construct the first strand of the Western Siberia Pipeline could result in the Soviets receiving a hypothetical interest rate subsidy of \$3.5 billion based upon a 10-year loan for \$8 billion at 8 percent interest. The Europeans would then recover up to \$1.3 billion of the subsidy by charging higher prices -- up to 20 percent more -- on goods and services the Soviets purchase with \$8 billion credit line. The Europeans are also likely to recover the remaining \$2.2 billion within 5 years based upon the lower purchase price for Soviet gas as compared for example to Algerian gas/LNG and Norwegian gas imports.
- (C) Separate and apart from the subsidy question, the current Soviet border purchase prices for Yamal gas -- \$4.50-4.75 per million BTU (MMBTU) -- appear to be competitive with the current European prices for alternate petroleum fuels and gas from new projects. The Yamal purchase prices are below the second half 1982 French-Algerian regasified LNG, the Italian-Algerian landed pipeline, and even the Norwegian Statfjord landed prices of \$5.75, \$5.40 and \$5.25 per MMBTU respectively.
- (C) Perhaps more important from long-term perspective of the European purchasers is the fact that future price adjustments are based largely on percentage changes in the prices of alternate petroleum fuels. The Algerian contracts with Belgium, Italy and France for up to 30 billion cubic meters per year of gas are linked absolutely on a BTU basis to price changes in a basket of OPEC crude oils rather than competing alternate fuels such as heating and residual fuel oils. Even if crude oil prices increase only \$1 per barrel per year over the 25 year contract, European purchases for example of 10 billion cubic meters per year of Algerian gas/LNG would cost an additional \$3.7 billion above what they would pay for a comparable amount of Soviet gas.

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- (C) The Soviet-European gas contracts apparently make provision for contingencies in the event energy prices remain soft and the 1985-86 floor price - \$5.50-\$5.60/MMBTU is higher than the prevailing gas sales prices. The Soviet/West German contract is supposed to include a provision which places an absolute deutschmark limitation on the amount buyers pay in the event the floor price exceeds the gas contract sales price. Once the limitation is reached, the European buyers and the Soviets renegotiate the floor price. Additionally, the buyers are later refunded in nominal dollars any sum paid when the floor price exceeded the market price. There is no comparable provision in the OPEC LNG and pipeline contracts with the Europeans.
- (C) The contract also balances the risks to the Europeans in terms of currency adjustments, minimum purchase requirements, and price reopeners. The German and French volumes (19 BCM/year) are repayable in deutschmarks and francs rather than dollars. This could result in substantial savings to the European purchasers over the next 25 years if their currencies continue to remain weak against the dollar. The 80 percent annual minimum purchase requirement provides the Europeans with more seasonal purchasing flexibility than the 90 and 100 percent requirements in Norwegian and Algerian purchase contracts. The contract also includes a triennial price reopener clause which allows both purchaser and seller the right to discuss the pricing terms every three years.
- (C) The bottom line is that the project appears to be commercially viable and includes a number of safeguards for the Europeans purchasers which they do not have in existing Free World gas import contracts. Second, the price of the gas is more favorable to the Europeans than supplemental supplies such as Norwegian Troll (Bloc 31/2) and Nigerian LNG which are not likely to come on-stream until after the Soviet project. Finally, the West Europeans view the Soviets as a reliable supplier. In over a decade the Soviets have never demanded a major price renegotiation (e.g., Netherlands and Algeria) or suspended deliveries for commercial or political reasons.

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CONFIDENTIALENERGY/ECONOMIC EVALUATION OF THE WEST SIBERIAN PIPELINE
PROJECT

- (C) 1. Overview - Efforts to analyze the energy commercial elements of the pipeline from the perspective of the West European commercial participants are complicated by the absence of much of the relevant data. Companies such as Ruhrgas, the West German natural gas company are not public utilities. Consequently, they are not subject to the regulatory fishbowl existence of their U.S. counterparts, nor do they receive government subsidies if there are financial problems. Additionally, Ruhrgas also has no pool of cheap regulated domestic natural gas to price average - in with expensive imports. The precise economic terms of the European/Soviet equipment and services deals are also secret given European sensitivities regarding the public disclosure of profit margins required to offset below market interest rates on loans extended to the Soviet Union. (Note: Given the absence of data on the various European/Soviet equipment loans, a hypothetical case was prepared on the loans. The energy analysis, however, is based on reports of the Ruhrgas/Soviet contract and discussion with industry specialists.)
- (C) 2. Interest Rate Subsidies - The Europeans are loaning the Soviets money at below market rates. The Soviets appear to be paying 8 percent annual interest on the unpaid principal and receiving a subsidy of 7 percent below the prevailing commercial rate of approximately 15 percent. The hypothetical case prepared in Table 3 indicates that the Soviets could receive up to a \$3.5 billion subsidy. The hypothetical loan repayment schedule includes a four year grace period before repayment begins and subsequent payback of the loan in 12 semiannual installments. The issue of Soviet payment of 1-2 percent commitment fees on undrawn principle was not included given both the one year drawdown period and the lack of reliable information. Finally, \$3.5 billion subsidy represents a worst case analysis for a one strand pipeline of 30 billion cubic meters per year (BCM/yr). (Note: There appears to be no direct contractual linkage between the interest rates on the loans and the gas prices.)
- (U) 3. Alternate Fuels Price - Natural gas competes with heating (gas oil) and residual fuel oil for a share of the energy heating market. The price a purchaser of natural gas can pay for imports depends in large part on the price of a mix of competing petroleum fuels rather than crude oils. Table 4 indicates that current European alternate petroleum fuels prices average about \$4.65-4.75 per million BTU (MMBTU). Similarly, the proper point for measuring the price competitiveness of liquefied natural gas (LNG) imports into Western Europe with the border price for pipeline gas is at the tailgate of the regasification plant.

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- (C) 4. Subsidy Offset - At current energy prices the West Europeans can recover the hypothetical \$3.5 billion interest rate subsidy to the Soviets within five years (Table 3). First, the European companies reportedly are charging the Soviet at least 20 percent higher prices on equipment and services to offset the lower interest rate. Assuming a 20 percent surcharge, the actual amount the Soviets are borrowing is closer to \$6.7 billion rather than \$8 billion -- i.e., \$6.7 times 1.2 surcharge equals \$8 billion credit line. Second, the current European border purchase price of approximately \$4.75/MMBTU for Yamal gas is \$0.75, \$0.65, and \$0.25/MMBTU lower than the comparable delivered and/or regasified prices for Algerian LNG and pipeline gas and Norwegian gas respectively (Table 5). France, Italy and West Germany will purchase on the average approximately 30 BCM/yr of Algerian LNG and pipeline gas and Norwegian Statfjord gas. Assuming the price differentials between these gas supplies remain constant, the Europeans will pay \$2.2 billion less for 30 BCM/yr of Soviet gas over a five year period. (Note: These calculations do not take into account the fact that Algerian contracts have a more robust price escalation formula).
- (C) 5. Base Gas Sales Price - The current European border price of \$4.75/MMBTU for Yamal gas is lower than other new gas supply projects. The figures in Table 5 point out that the Algerian regasified prices for French and Belgian LNG are estimated at \$5.50 and \$5.80/MMBTU respectively. (Note: The Belgian price includes estimated regasification charges for the Zeebrugge terminal which is now under construction). The Yamal gas is lower priced than the Norwegian Statfjord volumes -- \$5.25/MMBTU -- and is likely to be considerably below the soon-to-be negotiated Sleipner volumes - i.e., estimated landed price of \$5.50/MMBTU). OPEC LNG supplies from the Middle East and West Africa are even more expensive. The late 1981 CIF Western Europe prices for Nigerian LNG from the now defunct Bonny Project were \$5.50-5.75/MMBTU (\$6.00-6.50 regasified).

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- (C) 6. Price Escalation - Perhaps more important than the base price is the fact that the West Europeans obtained a competitive price escalation formula from the Soviets. The escalator (Tables 6 and 9) operates to adjust prices on a quarterly basis depending on percentage changes (i.e., proportional) in alternate fuels and crude oils. The component weightings (Table 9) of the escalation formula are 50 percent No. 2 home heating oil, 30 percent No. 6 low sulfur residual fuel oil (1 percent maximum sulfur content) and 20 percent world crude oils. The price reference points for the No. 2 and No. 6 oils are wholesale prices in West German cities rather than the sometimes volatile Rotterdam spot market. On the other hand, the Algerian escalation formula (Table 10) is linked absolutely on a BTU basis to OPEC crude oils. The key point here is that the Algerian type escalator results in higher payments for the purchaser over the life of the contract. The figures in Table 6 point out that assuming a \$1 per barrel per year increase in crude oil prices, the purchasers pay \$3.7 billion more for 10 BCM/yr of Algerian gas/LNG than they would pay for a comparable amount Soviet supplies.
- (C) 7. Floor Price - There are fears that if energy prices remain constant or decline through 1984-85, the Europeans will subsidize the Soviets by purchasing expensive gas. This point fails to address: (a) energy prices are unlikely to remain constant or decline in nominal terms through 1984-85; (b) the delivered and/or regasified price for other European gas imports (e.g., Algeria) is higher than the Soviet floor price; (c) natural gas purchase contracts, including the Soviet deal generally include market re-opener clauses which allow the buyer to invoke "market hardship" in the event the gas purchase price becomes uncompetitive with alternate fuels; and (d) the Soviets have demonstrated flexibility in gas pricing as witnessed by the recent reduction of their gas export price to European customers to about \$4.20-4.40 per million BTU in order to maintain sales in a soft, summer gas market.

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- (C) 8. Floor Price Continued - The contract calls for a floor of \$5.50 per million BTU at the time of initial deliveries; rising to \$5.60 at the time of full deliveries. The floor then remains frozen at \$5.60/MMBTU over the life of the contract. The contract reportedly includes a provision (Strictly Protect) which places an absolute deutschmark limitation on the amount the buyer pays in the event the floor price exceeds the prevailing market gas sales price. Once the limitation is reached, the European buyers and the Soviets renegotiate the floor price down in conformance with prevailing market conditions. Additionally, the buyer is later refunded in nominal dollars any sum paid when the floor price exceeded the market price.
- (C) 9. Currency Adjustor - The Soviets are accepting German and French payments in deutschmarks and francs respectively. This concession could save the Europeans considerable sums if over the life of the contract, the dollar remains strong against these currencies. ^{Other} European gas import contracts are payable in dollars.
- (C) 10. Minimum Purchase Requirement - The Soviets agreed to allow the buyer a minimum annual purchase requirement of 80 percent of annual contracts volumes. The comparable requirements for Norwegian gas and Algerian LNG are approximately 90% and 100% respectively. This generous minimum purchase requirement means the Europeans will spend less to construct expensive storage for gas purchased but not used in the summer. Regarding the issue of gas paid for by the Europeans but not taken in a given year, the Europeans can make-up these deliveries after they have taken the required minimum annual 80 percent requirement in a given calendar years. The European also have at least 3-5 years grace period in which to acquire volumes already paid for but not taken. These terms are less stringent than the comparable Algerian contractual arrangements; while the capital structure of the Norwegian projects requires 90 percent minimum annual purchases.
- (C) 11. Price Reopener - In addition to the floor price, the contract contains a triennial price reopener clause. After full contract delivery volumes are achieved and every three years thereafter, the contract allows both purchaser and seller to discuss the pricing terms. The contract also provides for a price reopener in the event major changes in the world energy market such as the 1973 or 1979 OPEC oil price increases.

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- (C) 12. European Perceptions of Reliability of Supply: Technical Considerations - The European purchasers appear satisfied with past Soviet performance in terms of the technical ability to deliver gas. The only problems over the past decade have been temporary Soviet reductions in winter deliveries given technical problems in their gas delivery infrastructure (Note: the Soviets are building storage for the indigenous market and they have limited winter peak shaving gas supply facilities). The Soviets subsequently made-up for the undelivered winter volumes by increasing summer deliveries. This in turn enabled the Europeans to reduce summer liftings of Dutch gas and to conserve their major strategic reserves of Free World gas. The Europeans have concerns about Algerian technical reliability of supply given the poor performance of the LNG facilities at Arzew and Skikda and the Algerian need for hundreds of foreign technicians to operate and maintain the facilities. The Europeans have no confidence that Nigeria or the Cameroons can do a better job.
- (C) 13. European Perceptions of Reliability of Supply: Political and Commercial - To date, the Soviets have never interrupted natural gas deliveries to Western Europe for commercial or political reasons. On the other hand, the Europeans have experienced the following problems with other gas suppliers: (1) Iran-unilateral cancellation of Iranian Gas Trunkline II Project in 1979; (2) Libya-unilateral interruption of LNG deliveries to Italy since September 1982 given the latter's refusal of Libyan price demands; (3) Nigeria - attempts to renegotiate Bonny LNG price terms (1980-81), postponement of LNG sales contract signings (Fall 1980), and termination of Bonny LNG Project -1982; (4) Algeria-unilateral renegotiation of gas supply contracts with all European and U.S. purchasers since 1980, unilateral suspension of deliveries to the U.S. El Paso Project in April 1980, and refusal to begin deliveries on new U.S. (Trunkline) and European (Italy, France and Belgium) until customers agreed to higher FOB price and revised price escalation formulas; and (5) Netherlands-unilateral but successful renegotiation of gas contracts (14) with four West European countries during 1980. Additionally, the Soviets gas pricing philosophy and marketing policies are acceptable to the Europeans.

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- (C) 14. Gas Pricing and Marketing -The Soviets sell gas based on its price competitiveness with alternate petroleum fuels in the consuming markets. The Algerians, however, espouse a pricing philosophy that the seller should receive BTU equivalence for natural gas and crude oil at the point of exportation. The buyer should then bear the responsibility for absorbing gas transportation and/or regasification charges. If the Algerian price philosophy were to prevail, natural gas could only be marketed in residential /commercial end usages with no alternate fuel capability and specific industrial uses which require gas as a feedstock and/or process fuel. These end usages combined account for no more than 60 percent of European gas consumption. If European countries continue to diversify gas imports from Norway Bloc 3 1/2, Nigerian LNG, and Algerian Trans-Mediterranean Pipeline, it will require: (1) substantial government subsidies to gas marketing utilities and consumers (e.g., Italy) and (2) relatively less expensive Soviet Yamal I gas to average-in with expensive Free World supplemental supplies.
- (C) 15. History of Soviet/European Gas Negotiations - Since the outset of the negotiations in 1979, the European purchasers sought a gas price linked to alternate petroleum fuels and an acceptable price escalation formula. By late 1981, Ruhrgas, Gas De France and the others achieved these objectives. The Germans offered a \$3.60 border price at the outset of the negotiations, while the Soviets sought \$5.60-6.00/MMBTU (Table 8). The two parties moved closer during the summer of 1981 with the Soviets demanding \$5.00-5.50 and the Europeans (i.e., Ruhrgas) offering \$4.00-4.40. By November, the Germans and the Soviets compromised at a \$4.75 German/Czech border price, effective July 1, 1981. The French signed and received Government approval late in 1981. The Soviet gave them a sweetener of a \$0.15/MMBTU lower price than the Germans to offset the longer transportation distance to France. The Italian firm SNAM concluded its deal late in 1981 at a border price of \$4.50, but the Government has not approved the deal. The Europeans appear to have concluded the final breakthroughs on the escalator and floor price towards the end of negotiations. The bottom line from the European perspective was that they obtained a commercially viable energy deal and forced a major gas exporter to forego the OPEC linkage of crude oil and natural gas on an absolute BTU basis.

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- (C) 16. Hard Currency Earnings - The soft gas market combined with European concerns about overdependence on Soviet gas resulted in downward revision of European gas purchases from 40 to no more than 30 BCM/yr. This in turn will result in annual hard currency revenues to the Soviets of approximately \$6.1 billion (i.e., 3 billion cubic feet per day times \$5.60 per million BTU floor price times 365 days) instead of the \$8-10 billion figure government policymakers have been citing in speeches and testimony. (Note: 30 BCM/yr of natural gas is equivalent to approximately 534,000 B/D oil equivalent.)

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TABLE 1-SUMMARY OF ECONOMIC TRADEOFFS
(\$ Billion)

Outflow

Hypothetical European Loan Subsidy = \$3.5 billion

Offsets

Higher prices charged for
European equipment and services = \$1.2 billion

Lower gas purchase prices for
Italy, France and FRG over 5 year period = \$2.3 billion

\$3.5 billion

SEE TABLES 2-4 FOR CALCULATIONS

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TABLE 2-CALCULATION OF SUMMARY TABLE
 (\$ Billion)

OutflowLoan Subsidy

- (1) Assume Hypothetical 10 year loan for \$8 billion at 8% market
- (2) A 15 percent market rate results in a \$3.5 billion interest subsidy to the Soviets

Offsets

- (1) Higher prices Europeans charge Soviets for equipment and services \$1.3 billion (\$6.7 billion X 1.2 = \$8 billion)
- (2) Assume following price differentials between Soviet gas and Algerian and Norwegian gas

- (a) For France: Regasified Algerian LNG Price is \$0.75/MMBTU higher than French border price for 800 million cubic feet per day of Soviet gas (8 billion cubic meters per year) - See Table 5

| | |
|---------------------|---------------|
| 5 years savings | |
| over Algerian price | \$1.1 billion |

- (b) For Italy: Landed price of Algerian pipeline gas in Southern Italy is \$0.65/MMBTU higher than Italian border price for 800 MMCF/D (8 BCM/yr of Soviet gas) - See Table 5

| | |
|---------------------|---------------|
| 5 year savings | |
| over Algerian price | \$950 million |

- (c) For West Germany: Border price of Soviet gas is \$0.25/MMBTU less than landed price of Norwegian Statfjord gas - 500 MMCF/D (5 BCM/yr)-See Table 5

| | |
|----------------------|----------------------|
| 5 year savings | |
| over Norwegian price | <u>\$232 million</u> |
| TOTAL | \$2.28 billion |

*Note: Hypothetical example assumes that relative differences between the gas price remain constant. It does not assume a more robust Algerian price escalation formula.

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TABLE 3-PIPELINE FINANCING SUBSIDY SCENARIOS
(\$ Billions)

| No. of Semiannual Repayment Periods | Principal Repayments | Semiannual Principal Repayments | YEAR | Annual Interest Payments at Annual Rates of: | | |
|--|-------------------------|------------------------------------|------|--|------|------|
| | | | | 8% | 12% | 15% |
| 1 | 4.0(Draw Credit) | | 1 | 0.32 | 0.48 | 0.60 |
| 2 | 4.0(Draw Credit) | | 2 | 0.64 | 0.96 | 1.20 |
| 3 | 8.0 | | 3 | 0.64 | 0.96 | 1.20 |
| 4 | 8.0 | | 4 | 0.64 | 0.96 | 1.20 |
| 5 | 8.0 | | 5 | 0.56 | 0.84 | 1.05 |
| 6 | 8.0 | | 6 | 0.45 | 0.68 | 0.85 |
| 7 | 8.0 | | 7 | 0.35 | 0.52 | 0.65 |
| 8 | 7.334 | 0.666 | 8 | 0.24 | 0.36 | 0.45 |
| 9 | 6.668 | 0.666 | 9 | 0.13 | 0.20 | 0.25 |
| 10 | 6.002 | 0.666 | 10 | 0.03 | 0.04 | 0.05 |
| 11 | 5.336 | 0.666 | | 4.00 | 5.96 | 7.45 |
| 12 | 4.670 | 0.666 | | | | |
| 13 | 4.004 | 0.666 | | | | |
| 14 | 3.338 | 0.666 | | | | |
| 15 | 2.672 | 0.666 | | | | |
| 16 | 2.006 | 0.666 | | | | |
| 17 | 1.340 | 0.666 | | | | |
| 18 | 0.674 | 0.666 | | | | |
| 19 | 0.008 | 0.666 | | | | |
| 20 | 100.052 | 8.00 | | | | |

100.052 - 2 = Average Annual Outstanding Principal

50.026 X 0.04 = \$2 billion subsidy with 4% interest rate differential

50.026 X 0.07 = \$3.5 billion subsidy with 7% interest rate differential

Hypothetical Assumptions

Approved For Release 2007/08/06 : CIA-RDP84T00109R000100100005-5

1. \$8 billion loan for one strand pipeline with 10 year term

2. 4 year grace period before repayment of principle begins

3. Repayment of principal in 12 semiannual installments

4. Drawdown of \$4 billion in first 6 months remaining \$4 billion in second 6 months

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(\$ Per Million BTU)

| | <u>20/80</u> | <u>50/50</u> |
|---|--------------|--------------|
| Alternate petroleum fuels, Rotterdam, March-August 1982: | 4.85 | 5.45 |
| Plus estimated oil distribution charge: | <u>0.75</u> | <u>0.75</u> |
| Subtotal | 5.60 | 6.20 |
| Less: | | |
| Estimated gas transmission charges: | 0.25 | 0.25 |
| Estimated gas distribution charges: (all classes of customers) | <u>1.00</u> | <u>1.00</u> |
| CIF border pipeline price: | 4.35 | 4.95 |
| Average Alternate Fuels Price | | \$4.65 |

SOURCE: Consists of 20/80 and 50/50 weighted average prices for No. 2 home heating oil and No. 6 low sulfur (1%) residual oil respectively as reported by U.S. Department of Energy for March-August 1982. Oil and gas downstream handling charges represent preliminary estimates derived from discussions with companies.

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TABLE 5-EUROPEAN PRICES FOR NEW GAS IMPORT SUPPLIES-JULY 1982
 (\$/per million BTU)

| <u>Country</u> | <u>Price</u> | <u>Volume</u> (Billion Cubic Meters Per Year) |
|--|------------------------------------|---|
| <u>Norway</u> | | |
| Statfjord landed in Emden | \$5.25 | 8-10 |
| <u>Algerian LNG</u> | | |
| France: | | |
| FOB | \$4.80 | 15 |
| Shipping | 0.20 | |
| Regas | 0.50 | |
| | <u>\$5.50</u> | |
| Belgium: | | |
| FOB | \$4.80 | 2-5 |
| Shipping | 0.30 | |
| Regas | 0.70 | |
| | <u>\$5.80</u> | |
| <u>Algerian Pipeline Gas:</u> | | |
| FOB | \$4.41 | 8-12 |
| Pipeline (includes transit fee thru Tunisia) | \$0.99 | |
| | <u>\$5.40</u> | |
| <u>Soviet-Yamal</u> | | |
| West Germany | \$4.75 | 10 |
| Austria | 4.75 | 2 |
| France | 4.60 (4.75 at French Border) | 8 |
| Switzerland | 4.75 | 1 |
| Italy | 4.50 (4.75-4.80 at Italian Border) | 8 |
| | | <u>29</u> |

Source: Industry and Trade Journals

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TABLE 6-HYPOTHETICAL PRICE ESCALATION SCENARIOS
(\$/MMBTU)

| <u>Annual Proportional</u> <u>Formula</u> | <u>Year</u> | <u>Algerian Absolute</u> <u>BTU Formula</u> |
|--|-------------|--|
| 4.75 Border Base Price | Jan. 1983 | \$4.75 FOB Base |
| 4.89 | 1984 | 4.92 |
| 5.03 | 1985 | 5.09 |
| 5.17 | 1986 | 5.27 |
| 5.31 | 1987 | 5.44 |
| 5.45 | 1988 | 5.61 |
| 5.59 | 1989 | 5.78 |
| 5.73 | 1990 | 5.95 |
| 5.87 | 1991 | 6.12 |
| 6.01 | 1992 | 6.29 |
| 6.15 | 1993 | 6.46 |
| 6.29 | 1994 | 6.63 |
| 6.43 | 1995 | 6.80 |
| 6.57 | 1996 | 6.97 |
| 6.71 | 1997 | 7.14 |
| 6.85 | 1998 | 7.31 |
| 6.99 | 1999 | 7.48 |
| 7.13 | 2000 | 7.65 |
| 7.27 | 2001 | 7.82 |
| 7.41 | 2002 | 7.99 |
| 7.55 | 2003 | 8.17 |
| 7.69 | 2004 | 8.34 |
| 7.83 | 2005 | 8.51 |
| 7.96 | 2006 | 8.68 |
| 8.10 | 2007 | 8.85 |
| 8.24 | 2008 | 9.02 |

Assumptions:

1. January 1983 base prices of \$4.75 per millions BTU
2. Crude oil escalation formula with basket of crudes with average base CIF sales price of \$34 per barrel
3. Crude oil basket price increases \$1 per year
4. Results:
 - (a) Algerian LNG \$0.77 per MMBTU higher than Soviet gas price by end of contract for each \$1/bbl annual increase in crude basket price
 - (b) For each 10 billion cubic meters per year of gas marketed under the Algerian formula, European customers would pay an additional \$3.7 billion over the life of the contract above what they would pay under the Soviet contract

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TABLE 7-OVERALL EUROPEAN GAS IMPORT PRICES - SEPTEMBER 1982
(Million BTU)

| | | <u>Volume</u> (Billion Cubic Meters Per Year) |
|--|----------------|---|
| Alternate fuels prices as developed in Table 2: | \$4.35-4.95 | |
| Yamal: | | |
| German/Soviet border price | \$4.75 | 11 |
| France/Soviet border price | \$4.60* | 8 |
| Italian/Soviet border price | \$4.50** | 8 |
| Flowing Soviet Supplies to Western Europe: | \$4.15-4.40*** | 25 |
| Flowing Dutch Supplies to Western Europe | \$4.20-4.40*** | 50-55 |
| Flowing France/Algerian LNG regasified: | \$5.50 | 15 |
| Belgian/Algerian LNG regasified-project to start-up this fall: | \$6.00 | 2-5 |
| Norwegian gas landed in UK or Germany: | | |
| - flowing (Frigg and Ekofisk) | \$4-4.25 | 28 |
| - under construction (Statfjord) | \$5.25 | 8-10 |
| Italian/Algerian Pipeline FOB | \$4.41 | 10-12 |
| Plus transport | \$0.99 | |
| Landed in Southern Italy | \$5.40 | |
| - Note: Italian/Border Price for Soviet Gas as of 1/1/82 | \$4.75 | |

SOURCES: Government and industry figures and papers

Includes an apparent \$0.15/MMBTU transportation allowance to offset longer distance from Soviet border than in the German case.

* Includes an apparent \$0.25/MMBTU transportation allowance to offset longer distance from Soviet border than in the German case.

** Price variance appears to stem mainly from small transportation differential allowances for various customers.

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TABLE 8-EUROPEAN/SOVIET GAS BARGAINING POSITIONS - HISTORICAL
(Million BTU)

| | <u>Initial Soviet</u> <u>Position</u> (6/80-6/81) | <u>Initial German</u> <u>Position</u> (6/80-6/81) | <u>Apparent Revised</u> <u>German Position</u> (Fall 1981) | <u>Apparent Final Soviet</u> <u>Counterproposal</u> (Fall 1981) | <u>Price Actually</u> <u>Agreed To</u> (November 1981) | <u>Apparent Current</u> <u>Contract Prices</u> (September 1982) | <u>Current European</u> <u>Alternate Fuels Prices</u> (September 1982) |
|---|---|---|--|---|--|---|--|
| Minimum Base Price as of 1/1/81: | 5.60-6.00 | 3.60 | 4.00-4.40 | 5.00-5.25 | 4.50-4.75* | 4.50-4.75 | (\$4.65) 4.35-4.95 |
| Plus: | | | | | | | |
| Estimated gas trans- mission charges | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Estimated gas distri- bution charges (all classes of customers) | 1.0 | 1.0 | 1.0 | 1.0 | 1.00 | 1.00 | 1.00 |
| Subtotal | 6.85-7.25 | 4.85 | 5.25-5.65 | 6.25-6.50 | 5.75-6.00 | 5.75-6.00 | \$5.90 |
| NOTE: | | 20/80* | 50/50* | | | | |
| No. 2 Price-Rotterdam Plus oil distribution charges | 6.75 0.75 7.32 | 5.90 | 6.44 | | | | |
| No. 6 oil price-Rotterdam Plus oil distribution charges | 4.80 0.75 5.55 | | | | | | |

SOURCE: Consists of 20/80 and 50/50 weighted average prices for No. 2 and No. 6 oils as reported by U.S. Department of Energy for the second and third quarters of 1981. Oil and gas downstream handling charges represent preliminary estimates.

Note: September 1982 Contract Prices

| | |
|--------------|---------------|
| West Germany | \$4.75 |
| France | \$4.60 |
| Italy | \$4.50 |
| Austria | \$4.75 |
| Switzerland | \$4.65-\$4.75 |

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$$I = P \times \left(0.5 \frac{X^1}{X} + 0.3 \frac{Y^1}{Y} + 0.2 \frac{Z^1}{Z} \right)$$

I = Current sales price

P = \$4.75 West German/Austrian base price - 7/81

4.60 French base price - 7/81

4.50 Italian (tentative-deal not approved by GOI) base price-1/82

X = Price of No. 2 home heating oil (gasoil) based on a number of German cities

X¹ = Changes in No. 2 oil price on a quarterly basis.

Y = Price of No. 6 residual fuel (1% sulfur content) in West German cities

Y¹ = Quarterly change in No. 6 oil prices.

Z = Basket of crude oils based on official government sales prices (OSP) - Note: Contents of basket are unknown

Z¹ = Quarterly changes in crude oil basket price.**CONFIDENTIAL**

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TABLE 10-NATURAL GAS PRICE ESCALATION FORMULA-B

Algerian/French and Belgian LNG Contracts

$$P_1 = P \times B - B_1$$

P = Base LNG FOB Price

B = Base price for basket of crude oils consisting 50 percent of crudes sold by gas producers (Algeria, Libya, Abu Dhabi and Indonesia) and 50 percent crudes imported by France or Belgium in the respective contracts.

B = Semiannual changes in the crude oil basket price.

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